DISTRICT OF COLUMBIA
PUBLIC SCHOOLS

Office of the Chief Academic Officer

Summer 2010

Mathematics Summer Learning Packet

Grades K-2

Introduction

The Mathematics K-2 Summer Learning Packet was created to provide students with activities that will allow them to practice and review mathematical skills and concepts. All of the activities are aligned to the DC Public Schools Mathematics Learning Standards. Activities may be completed independently, with a parent or adult, with a sibling, or friend. Because this packet includes activities for students in Grades K-2, parents should select those activities that are appropriate for their child/children. It is recommended that parents help to pace their children through the packet.

Have a great summer!

HANDFUL OF PENNIES

What You Need:

- **Pennies (any small item may be substituted for the pennies such as buttons, small individually wrapped candy, M & M's, beans, pasta, or cereal)**

Grab a handful of pennies. Count them. How many did you grab? Write the number. Can you grab *more*? Try it. Don't forget to count the pennies. How many did you grab? Write the number. Grab two handfuls of pennies. How many did you grab this time? Count them. Write the number. Circle the number that shows the *most* number of pennies.

Additional Activities:

- Ask an adult to grab a handful of pennies. Count them. Who grabbed more pennies? Why?
- Place a number of pennies less than 10 on a table. Ask the child to select enough pennies to make 10, make 20, and then make 30.
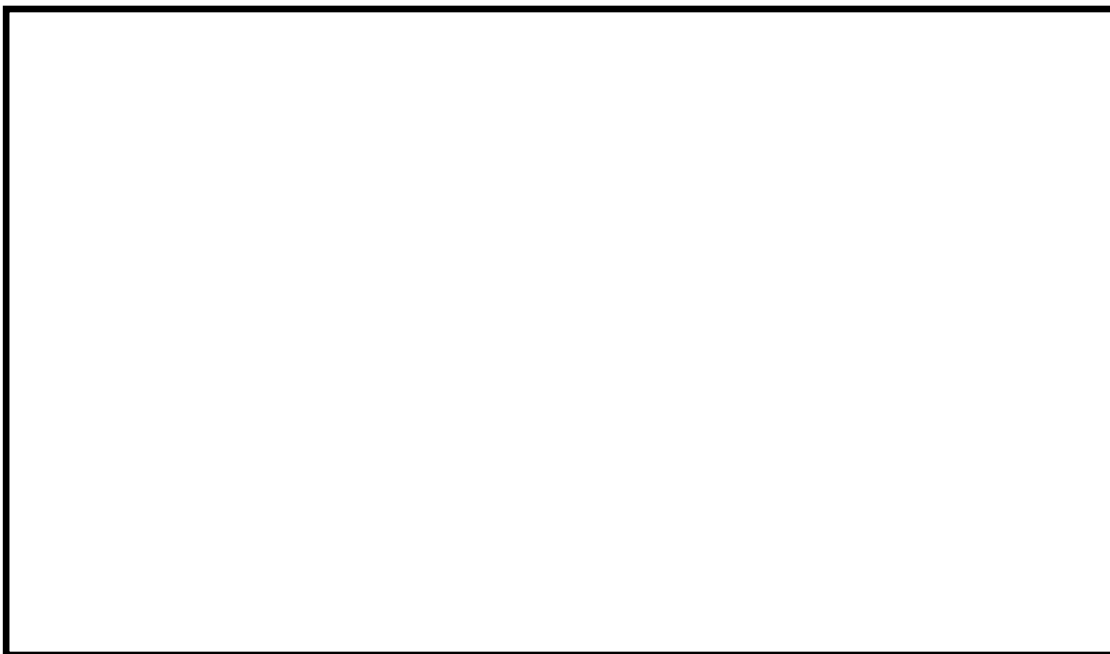
ORDER, PLEASE!

Use a pencil, crayon or marker to answer each item.

- o   Draw a ◯ around the ***third*** object.

- o   Draw a △ around the ***fifth*** object.

- o   Draw a ▢ around the ***second*** object.
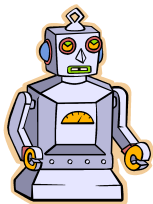
| bear | robot | crayons | bag | cat | car |

- o   Draw a picture of the ***sixth*** object in the space below.

NUMBER GRID ACTIVITY

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

- o   Select a crayon or marker. Count by 5s. Color each number as you count.
- o   Select a different color of crayon or marker. Count by 10s. Color each number as you count.
- o   Write the numbers that have two colors on the line below.

_____   _____   _____   _____   _____

Additional activities with this Number Grid are on the next page.

Additional Activities

Write the numbers you colored when you counted by 5s.

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

What is the same about all of the numbers you have written?

_____

_____

_____

What is different about the numbers?

_____

_____

_____

Can you continue counting by 5s below?

5, 10, 15, 20, 25, 30, 35, 40, 45, 50, ___, 60, 65, ___,

75, ___, 85, ___, ___, 100

"SHAPES TO KNOW"

- o   Color all squares red. Count the squares. How many squares are there? _____.
- o   Color all triangles blue. Count the triangles. How many triangles are there? _____.
- o   Color all rectangles green. Count the rectangles. How many rectangles are there? _____.
- o   Color all circles orange. Count the circles. How many circles are there? _____.
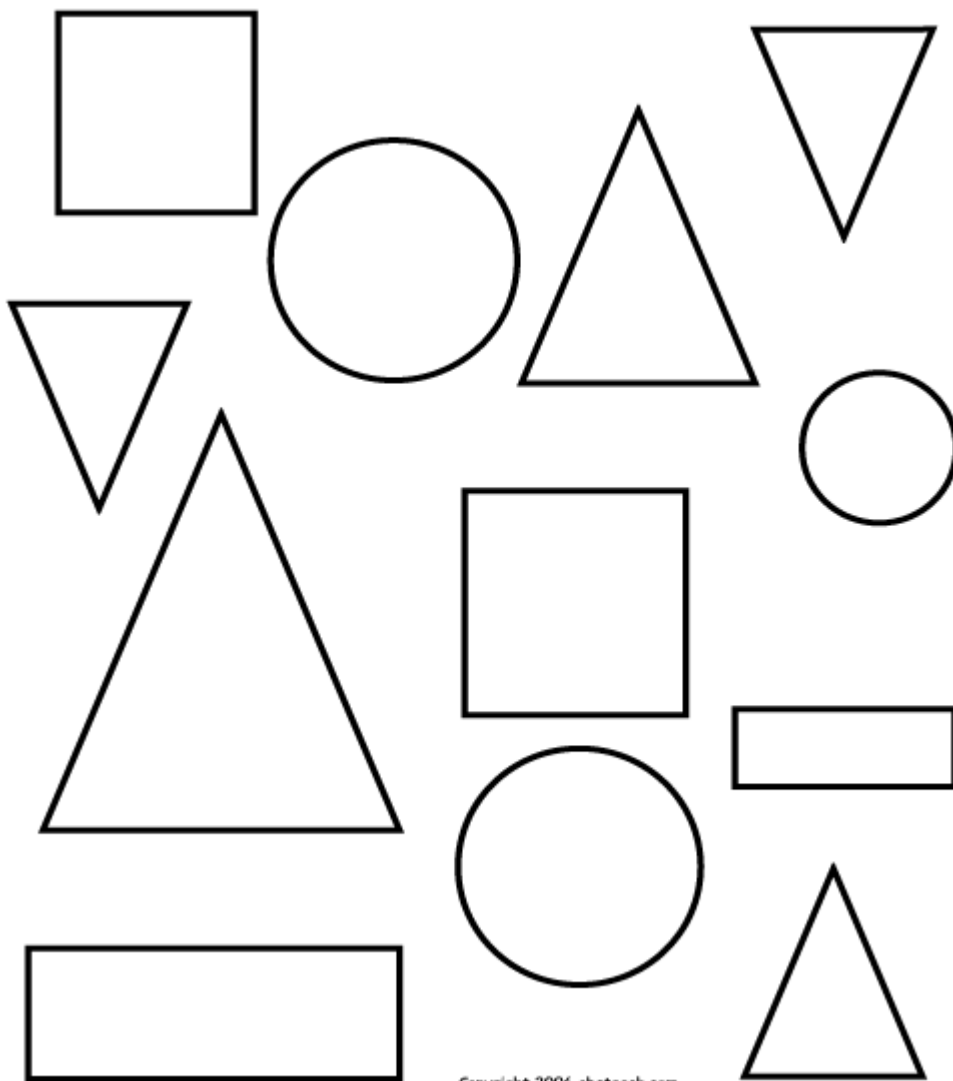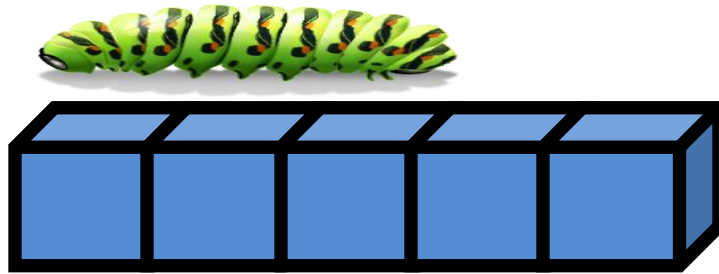
Copyright 2006 abcteach.com

✂ MAKE A SHAPE PICUTRE!

Carefully cut out each shape on the previous page. Make a picture in the space below using 8 or more shapes. Glue your picture.

MY PICTURE

HOW LONG, HOW TALL?

How long is the caterpillar?   _____ **cubes**

Draw a tree that is six cubes tall.
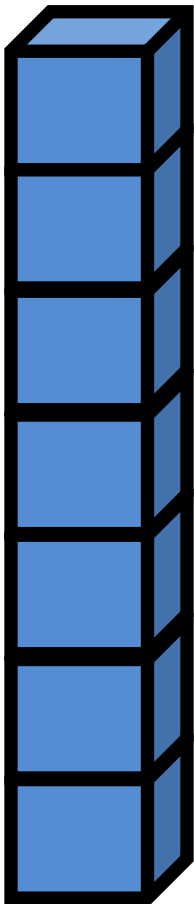
FAVORITE TREATS IN MS. LEE'S KINDERGARTEN CLASS

🍪				
🍪				
🍪			🍎	
🍪	🍦		🍎	
🍪	🍦	🍬	🍎	🍫
🍪	🍦	🍬	🍎	🍫
Cookies	**ice cream**	**candy**	**apples**	**brownies**

A. Which treat is liked most? _____

B. How many children like apples? _____ children

C. Which treat do you like most? Draw a picture of your treat in the correct space.

Ten More

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

- Start with 14. Write the number that is 10 more.   _____

- Start with 46. Write the number that is 10 more.   _____

- Start with 82. Write the number that is 10 more.   _____

- Start with 39. Write the number that is 10 more.   _____

- Where can you find the number that is 10 more than a number?

  _____
  _____

- CHALLENGE!! Start with 98. What number is 10 more?   _____ Explain how you got your
  answer?_____

  _____
  _____
  _____

NAME-COLLECTION BOXES

Write ten names for 24 in the 24-box. (Example: $10 + 14 = 24$)

24

Write twelve names for 36 in the 36-box. (Example: 3 tens + 6 ones = 36)

36

STORY PROBLEMS

Kimberly counted the number of pets that live in homes on her street. She counted 7 dogs, 4 cats, 2 hamsters, and 1 rabbit. How many total pets live on Kimberly's street?

Jose counted 20 birds in a tree. 6 birds flew away. How many birds were left?
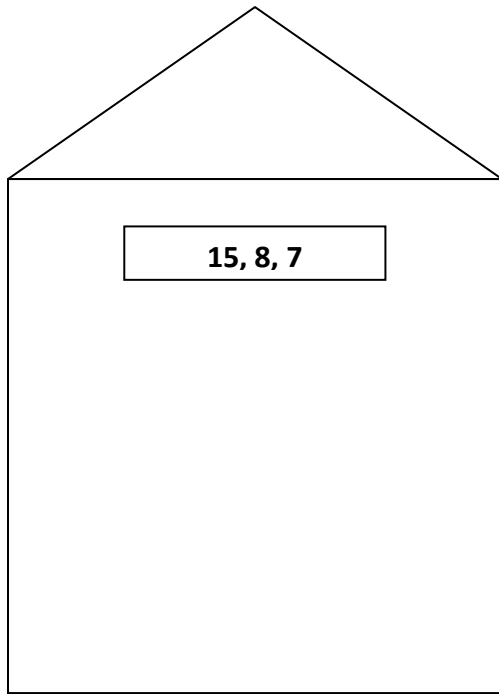
COUNTING PATTERNS

Start with the number with the star. Skip count by 2 to 100. Color the space for each number you say.

1	2	3	4	5	6	7 ⭐	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
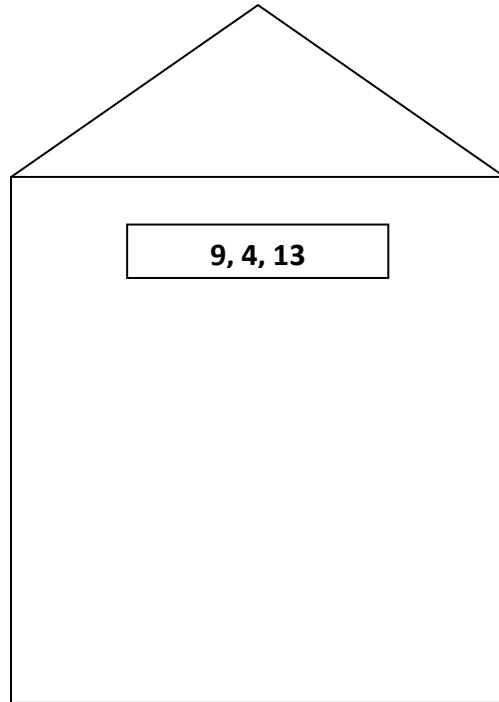
Challenge: If you continue to skip count by 2, would the number 102 be in this pattern? Why or why not?

_____

_____

_____

_____
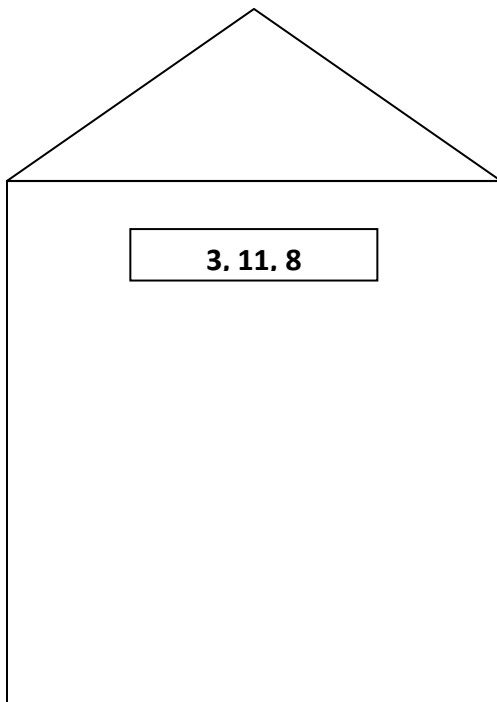
_____

_____

FACT FAMILIES

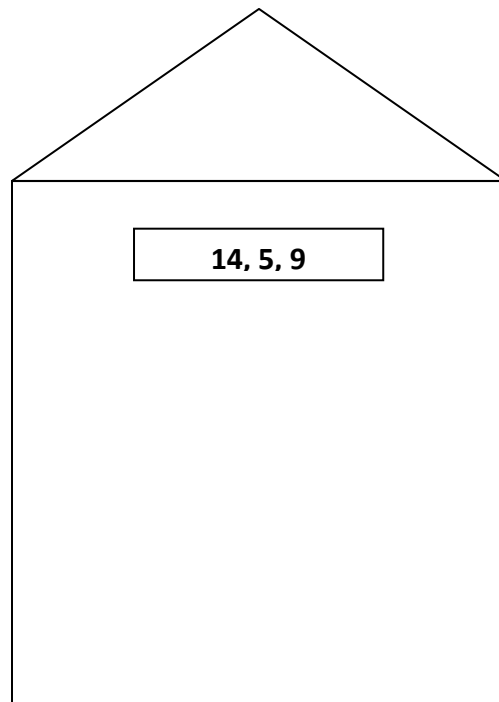**Write all of the facts for each group of numbers.**

15, 8, 7

9, 4, 13

3, 11, 8

14, 5, 9

NUMBER PATTERNS

Complete each number pattern.

a) 42, 44, 46, _____, 50, 52, _____, 56

b) 70, 60, 50, _____, 30, _____, _____

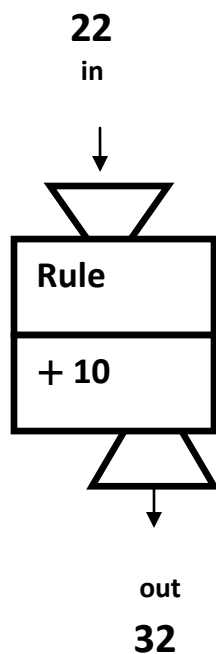c) 5, 7, 9, _____, _____, 15, 17, _____, 21

d) 35, 40, 45, _____, 55, 60, _____, _____, 75, 80, 85, _____

e) 24, 22, _____, 18, 16, _____, 12, 10, _____, 6

f) 2, 5, 8, 11, _____, 17, 20, _____, 26, 29, _____, 35, _____
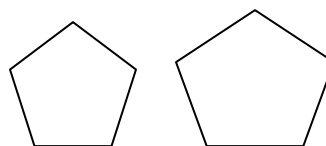
WHAT'S MY RULE?

You know the rule. Find the output number.

22
in

↓

Rule

+ 10

↓

out
32

Rule: + 10	
in	Out
22	32
18	
66	
81	

"Same Shape, Same Size"

Circle all of the pairs of shapes that are congruent (i.e., shapes that are the same shape and the same size). (*You may color the shapes*.)
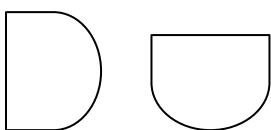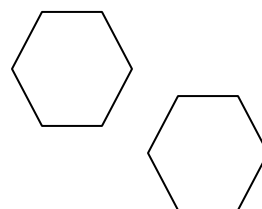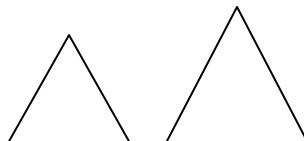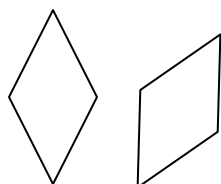
"Line of Symmetry"

Draw a line a symmetry for each shape. (*You may color the shapes*.)
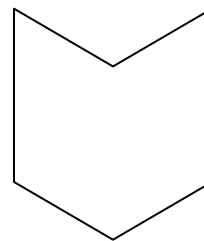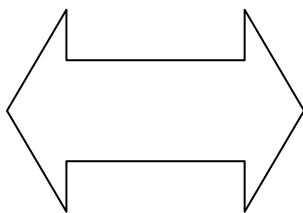
I Am Thinking of a Number (Game)

Read the clues. Can you guess the correct number?

I am thinking of a number between 20 and 30. The number is greater than 22 and less than 26. The number is even. What's the number?

_____

I am thinking of a number between 60 and 70. This number is a palindrome (in other words, it's the same number if you read it forwards OR backwards). What's the number?

_____

I am thinking of a number between 100 and 120. The number is greater than 111 and less than 115. The number is odd. What's the number?
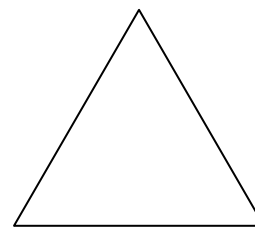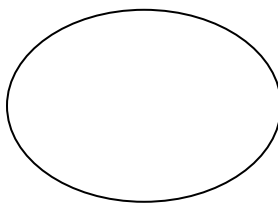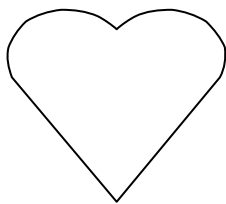
_____

I am thinking of a number between 90 and 100. The number is greater than 93 and less than 97. The number has two odd digits. What's the number?

_____

I am thinking of a number between 50 and 60. Ten more than the number is 64. What's the number?

_____

I am thinking of a number between 130 and 140. The number is a palindrome. What's the number?

_____

Write your own _I Am Thinking of a Number_ clues. Ask a family member or friend to guess the number.

_____
_____
_____
_____

"Ways to Make 10"

Use the pictures or 10 objects of your own. Write addition number sentences that have a sum of 10. See if you can find all of the ways to make 10. Write your number sentences in the space below.
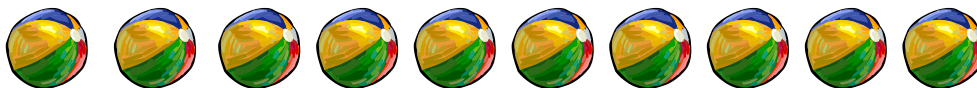
The Case of the Missing Addends

Ms. G. O. Figure has a mystery to solve. She wrote addition facts on the chalkboard to help students learn them. Now one addend has been erased from each problem. Help Ms. G. O. Figure solve this mystery by writing the correct addend that completes each addition fact.

a) _____ + 11 = 16   7 + _____ = 14   12 + _____ = 12

b) 9 + _____ = 14   _____ + 3 = 11   _____ + 7 = 15

c) 10 + _____ = 18   _____ + 9 = 16   6 + _____ = 17

d) 4 + _____ = 13   _____ + 8 = 17   13 + _____ = 16

e) 11 + _____ = 15   2 + _____ = 11   _____ + 8 = 16

f) _____ + 10 = 17   14 + _____ = 14   15 + _____ = 17

g) 9 + _____ = 18   _____ + 5 = 11   5 + _____ = 15

OH, NO! Someone has erased both addends in the last six problems! Write two addends for each sum in the problems below.

a) _____ + _____ = 12   _____ + _____ = 13   _____ + _____ = 9

b) _____ + _____ = 7   _____ + _____ = 15   _____ + _____ = 14

Places Everyone!

| 3 | 8 | 5 |
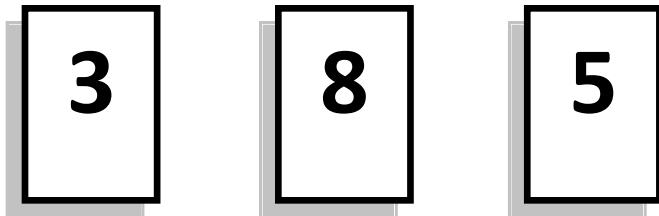
How many different numbers can you make using the three digits above.

Rules:
- **You must use <u>at least</u> two digits for each number.**
- **No digit may be repeated in a number.**

List your numbers in the space below. Use the back of this sheet if you need more space.

Add and Compare

Find the sum for each pair of problems. Then compare the sums using <, >, or =. The first one has been done for you.

$$
\begin{array}{r} 65 \\ +56 \\ \hline 121 \end{array}
\quad \boxed{>} \quad
\begin{array}{r} 37 \\ +79 \\ \hline 116 \end{array}
\qquad\qquad
\begin{array}{r} 76 \\ +57 \\ \hline \end{array}
\quad \boxed{} \quad
\begin{array}{r} 94 \\ +29 \\ \hline \end{array}
$$

$$
\begin{array}{r} 54 \\ +83 \\ \hline \end{array}
\quad \boxed{} \quad
\begin{array}{r} 82 \\ +65 \\ \hline \end{array}
\qquad\qquad
\begin{array}{r} 48 \\ +75 \\ \hline \end{array}
\quad \boxed{} \quad
\begin{array}{r} 63 \\ +89 \\ \hline \end{array}
$$

$$
\begin{array}{r} 36 \\ +88 \\ \hline \end{array}
\quad \boxed{} \quad
\begin{array}{r} 29 \\ +67 \\ \hline \end{array}
\qquad\qquad
\begin{array}{r} 55 \\ +59 \\ \hline \end{array}
\quad \boxed{} \quad
\begin{array}{r} 46 \\ +76 \\ \hline \end{array}
$$

$$
\begin{array}{r} 78 \\ +53 \\ \hline \end{array}
\quad \boxed{} \quad
\begin{array}{r} 46 \\ +95 \\ \hline \end{array}
\qquad\qquad
\begin{array}{r} 66 \\ +64 \\ \hline \end{array}
\quad \boxed{} \quad
\begin{array}{r} 83 \\ +97 \\ \hline \end{array}
$$

The "100 Think" Game

Object of the Game: To find two numbers that sum close to 100 when added.
Number of Players: 2
Materials: 20 index cards with the following numbers, one number per card

| 22 | 84 | 18 | 81 | 5 | 92 | 47 | 50 | 79 | 16 |
| 36 | 60 | 29 | 72 | 41 | 58 | 15 | 90 | 3 | 95 |

How to Play

- Mix up the index cards.
- Place each card face down on a table or other smooth surface.
- Player 1 takes two cards and turns them over. If the sum of the numbers is 100 or close to 100 (95, 96, 97, 98, 99 or 101, 102, 103, 104), the player keeps the cards.
- If the sum of the numbers is not 100 or close to 100, the cards must be returned to the table face down.
- Player 2 repeats the activity.
- Play continues until no more pairs can be made.

Winner: The player with the most cards at the end of the game wins.

Game from the *Arithmetic Teacher*, March 1992

Starfish Math

A starfish has five "arms" that give it a shape that looks like a 5-point star. Counted together, two starfish have 10 points. Answer each question below. Show your thinking through writing, drawing, numbers, or counters.

- How many points do 5 starfish have?

- How many points do 8 starfish have?

- How can you predict the number of points for any number of starfish?

_____

_____

_____

_____

_____

_____

Activity from *Teaching Children Mathematics,* April 2009

On the Boardwalk

Your family has taken a trip to the beach in Ocean City, Maryland. You stop in a shop on the boardwalk to buy a gift for a friend back home. You spend $0.55.
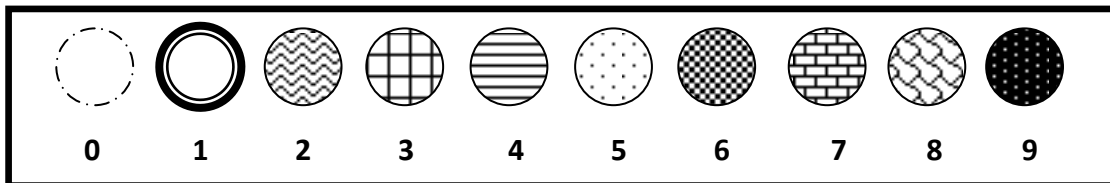
- Use pictures, words, or numbers to show at least 5 different combinations of coins you can use to pay for the gift.
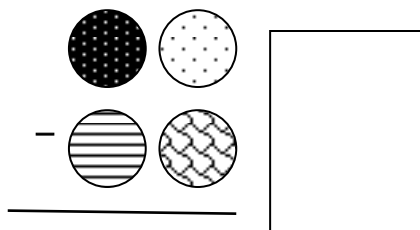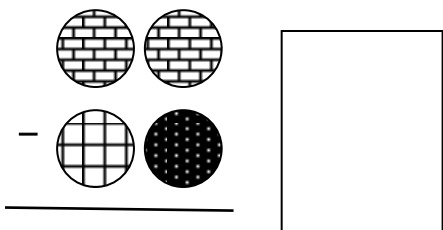
Show your work.

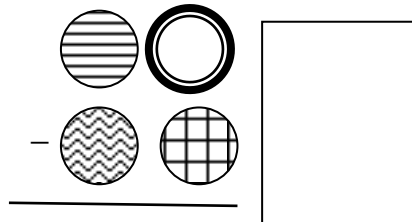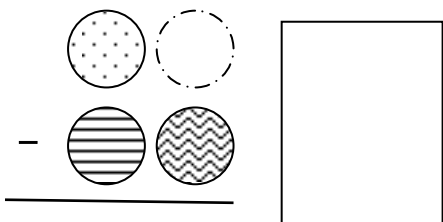- Can you make a combination using no dimes? Why or why not?

_____

_____

_____

_____

_____

Crack the Code!!

0	1	2	3	4	5	6	7	8	9

To solve each problem below, you must first crack the code. Use the rectangle to show your work.
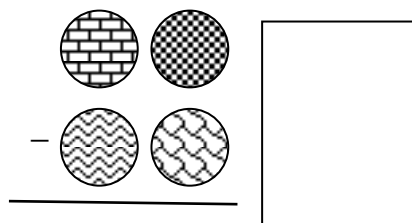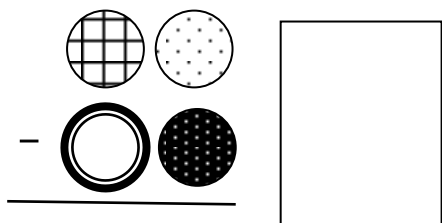
Math and Literature

**Below is a poem written by Shel Silverstein. Read the poem carefully and try to guess what his illustration looks like. Then use the space below to draw your picture about the poem.**

Shapes	**My Illustration**

**A square was sitting quietly
outside his rectangular shack
when a triangle came down
—kerplunk!--And struck him
in the back."I must go to the
hospital, "cried the wounded
square, so a passing rolling circle
picked him up and took him there.**

"Shapes" is in a book titled *A Light in the Attic.* Ask an adult to help you get the book from the library. Look on page 77 to compare your illustration with the one in the book. Then answer the questions below.
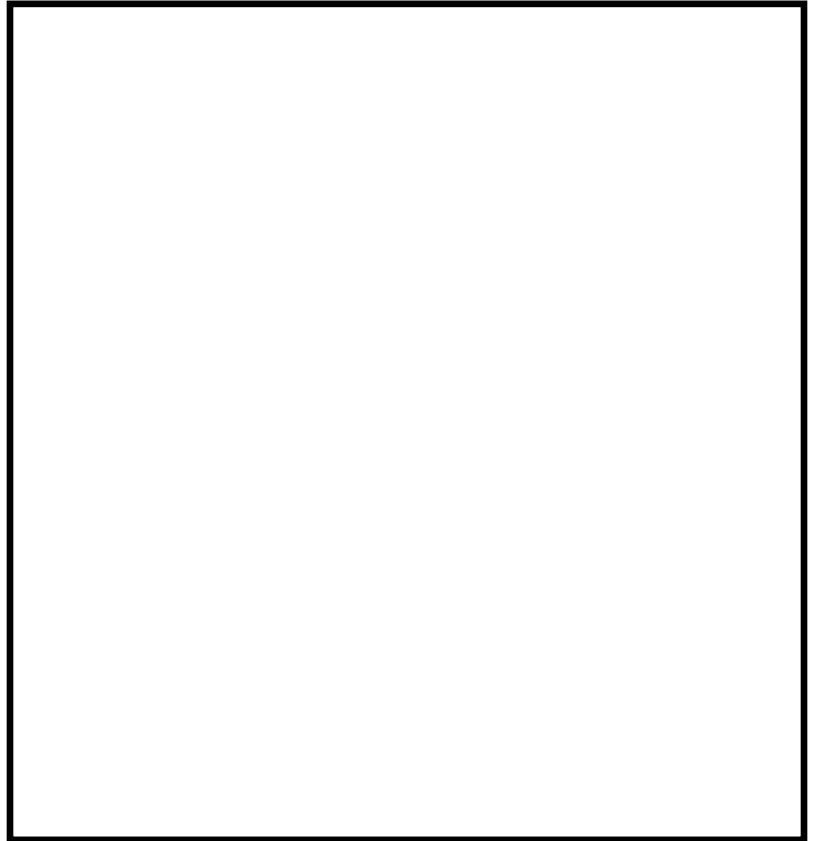
- How are the illustrations alike? _____
  _____
  _____

- How are they different? _____
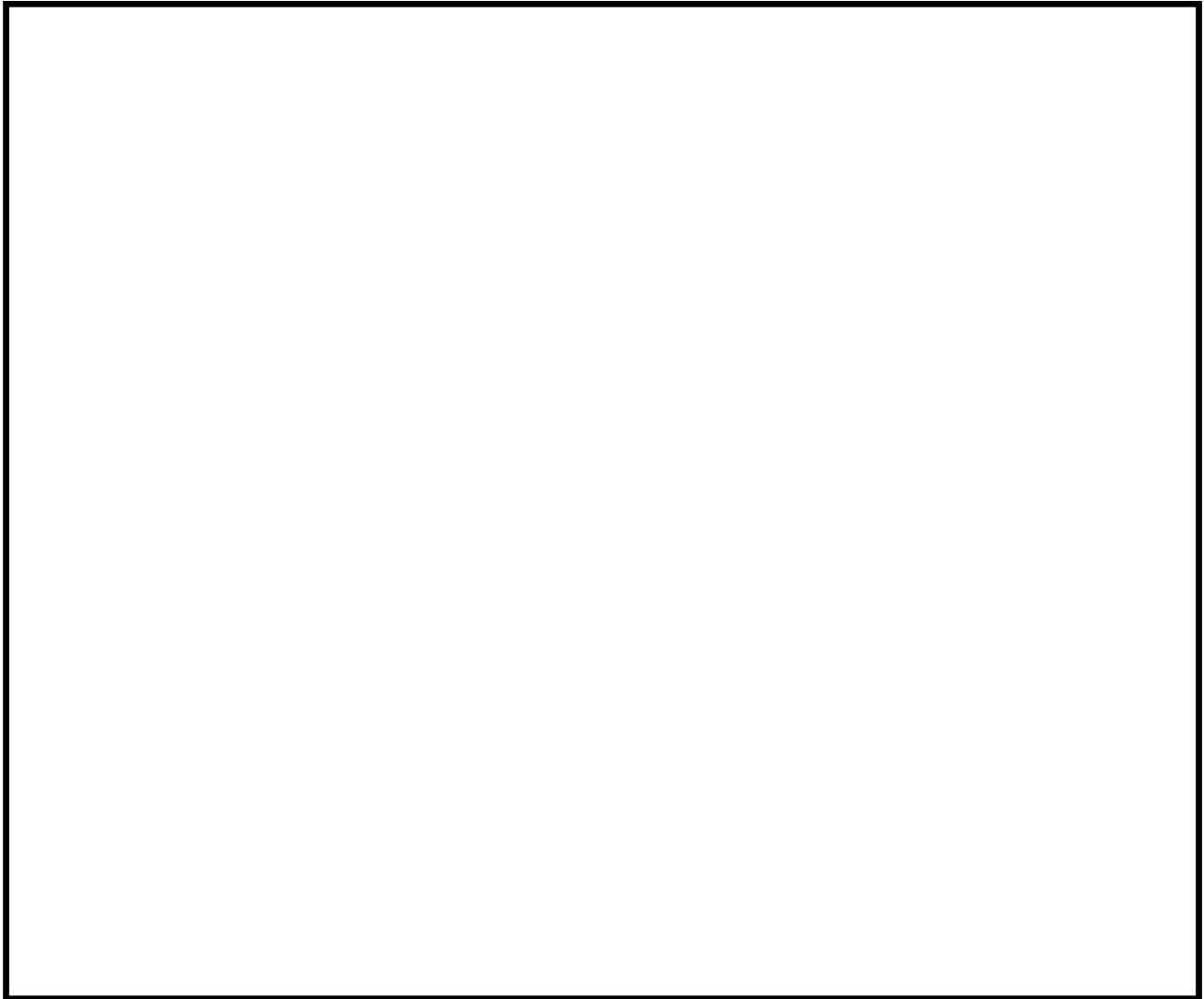 _____
  _____

- What part of the poem is missing in Shel Silverstein's illustration? _____
  _____

Activity from the *Arithmetic Teacher* May 1993

A Trip to the Beach

For a family vacation to the beach, Derrick's mom told him to pack more than his swimming trunks this time. He decided to take black shorts, tan shorts, a green shirt, a blue shirt, and a red shirt. How many different combinations of outfits will he have to choose from while on his trip to the beach?

Draw a picture to show your answer.

How does your answer change if Derrick adds another shirt? _____
_____
_____
_____

Activity adapted from *Teaching Children Mathematics,* October 2009